

**Claims:**

1. A device operative in a digital communication system and adapted to receive digital signals and transmit them along a transmission path, characterized in that said device is capable of preventing the transmission of a message comprising a pre-defined sequence of signals that are indicative of a malfunction occurred at said transmission path.

10 2. A device according to Claim 1, wherein said message is an AIS message.

15 3. A device according to Claim 1, wherein said message is comprised within a payload of a packet in a packetized type of transmission.

20 4. A device according to Claim 1, adapted to receive coded digital signals and decode them into their decoded digital output signals, characterized in that when receiving a bit stream of at least a first number of consecutive bits each having the value of 1, is capable of preventing the transmission of said bit stream further along the transmission path.

25 5. A device according to Claim 4, wherein the coded digital signals received are selected from the group consisting of voice signals, fax signals, data signals, voiceband data signals and video signals.

30 6. A device according to Claim 5, wherein the signals received are voice signals.

7. A device according to Claim 6, wherein said first number of consecutive bits each having the value of 1 is at least from about 10 bits.

5 8. A device according to Claim 7, wherein said first number of consecutive bits each having the value of 1 is in the range of from at least about 20 to about 40 bits.

10 9. A device according to Claim 3, wherein the prevention of transmission of said message comprising a pre-defined sequence of signals is done by discarding a packet comprising said message.

15 10. A device according to Claim 3, wherein the prevention of transmission of said message comprising a pre-defined sequence of signals is done by discarding a frame comprising said message.

20 11. A device according to Claim 3, wherein the prevention of transmission of said message comprising a pre-defined sequence of signals is done by discarding a packet comprising said message.

25 12. A device according to Claim 3, wherein the prevention of transmission of said message comprising a pre-defined sequence of signals is done by replacing said message with another message and forwarding a packet comprising the replacing message.

30 13. A device according to Claim 3, wherein the prevention of transmission of said message comprising a pre-defined sequence of signals is done

by replacing said message with another message and forwarding a frame comprising the replacing message.

14. A device according to Claim 12, wherein the  
5 replacing message is dependent on the contents of a message preceding the message that comprises said pre-defined sequence of signals and the contents of a message following the message that comprises said pre-defined sequence of signals.

10 15. A digital telecommunication station adapted to operate in a digital communication system, and comprising:

15 at least one receiving means adapted to receive digital signals;  
20 at least one controller adapted to receive a group of digital signals and determine whether said group comprises a message comprising a pre-defined pattern;  
25 at least one routing means controlled by said at least one controller and adapted to allow transmission of the digital signals, provided that said group of digital signals does not comprise the message comprising the pre-defined pattern; and  
30 at least one transmitting means adapted to receive signals from said routing means and transmit them.

16. A digital telecommunication station adapted to operate in a digital communication system, and comprising:  
30 at least one pair of compressing/decompressing devices each adapted to encode/decode digital signals received;

at least one controller adapted to receive a bit stream of encoded digital signals and determine whether said bit stream comprises at least a first number of consecutive bits each having the value of 5 1;

10 at least one router controlled by said at least one controller and adapted to allow transmission of the digital signals in their decoded form, provided that said bit stream does not comprise at least a first number of consecutive bits each having the value of 10 1.

15 17. A digital communication system, comprising:  
transmission means at least a first end of a transmission network for transmitting digital signals;  
receiving means at at least a second end of the transmission network;  
a transmission path connecting said transmitting means with said receiving means; and  
20 at least one controlling means operative along said transmission path and adapted to prevent receipt of a transmission of a message comprising a pre-defined pattern, by said receiving means.

25 18. A digital communication system for interconnecting a plurality of telecommunication trunks via a transmission path, comprising:  
first transmission means at least a first end of the transmission network adapted for transmitting digital signals;  
30 at least one pair of telecommunication stations of Claim 16; and

receiving means at at least a second end of the transmission network.

19. A digital telecommunication system according to any 5 one of Claims 17, wherein said transmission path comprises a member selected from the group comprising of optical fiber, digital microwave and satellite route.

10 20. A method for use in a digital communication system which method comprises:

- (i) receiving digital signals transmitted along a transmission path;
- (ii) determining whether the digital signals received comprise a pre-defined pattern that characterizes a message generated as a result of a malfunction occurring in said digital communication system;
- (iii) transmitting the digital signals as long as no such a pre-defined pattern is detected; and
- (iv) preventing the transmission of digital signals along the transmission path in the event that said pre-defined pattern is detected.

25 21. A method for use in a digital communication system comprising:

- (i) receiving encoded digital signals transmitted along a transmission path;
- (ii) determining whether the encoded digital signals received comprise a sequence of pre-defined 30 number of consecutive bits each having the value of 1;
- (iii) decoding the encoded digital signals as long as no such a sequence is detected and

forwarding then towards a receiving end of the transmission path; and

5 (iv) preventing the transmission of decoded digital signals along the transmission path in the event that a sequence of pre-defined number of consecutive bits each having the value of 1 was detected.

22. A method according to any one of Claim 21, further comprising:

10 (v) resuming the transmission of digital signals along said transmission path following the removal of the cause for initiating said pre-defined pattern of signals.

15 23. A method for use in a digital communication system, which method comprises:

20 (i) transmitting a message comprising a sequence of characters identifying the operative transmitting means, the type of signals to be transmitted and their destination;

(ii) establishing a communication link between a first transmitting means and a receiving means at the transmission destination;

25 (iii) exchanging signals between a pair of telecommunication stations operative along the transmission path, identifying for each one the existence of the other and the rate for transmitting signals therebetween;

30 (iv) transmitting information signals in their encoded form at the rate defined along a transmission path;

(v) receiving encoded digital signals transmitted along a transmission path;

(vi) determining whether the encoded digital signals received comprise a pre-defined pattern that is reserved for an alarm message in said digital communication system;

5 (vii) decoding the encoded digital signals as long as no such a pre-defined pattern is detected;

(viii) preventing the transmission of decoded digital signals along the transmission path following the event that said pre-defined pattern was detected.

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24. A method according to Claim 23, further comprising the steps of:

(ix) awaiting for the cause for initiating said alarm message is removed; and

15 (x) resuming transmission of decoded digital signals along said transmission path.

25. A device according to Claim 1, wherein the alarm message is a legitimate code in an algorithm selected from the group consisting of LD-CELP, CS-ACELP; E-CELP and A-CELP, Q-CELP, VCELP.

26. A digital telecommunication station according to Claim 15, wherein the alarm message is a legitimate code in an algorithm selected from the group consisting of LD-CELP, CS-ACELP; E-CELP and A-CELP, Q-CELP, VCELP.

27. A digital communication system according to Claim 17, wherein the alarm message is a legitimate code in an algorithm selected from the group consisting of LD-CELP, CS-ACELP; E-CELP and A-CELP, Q-CELP, VCELP.

28. A method according to Claim 20, wherein the alarm message is a legitimate code in an algorithm selected from the group consisting of LD-CELP, CS-ACELP; E-CELP and A-CELP, Q-CELP, VCELP.